



An analysis of safeness of work environment in Korean manufacturing: The “safety climate” perspective

Oh-Jun Kwon¹, Young-Sun Kim^{*}

Occupational Safety and Health Research Institute, Korea Occupational Safety and Health Agency (KOSHA), 478 Munemi-ro, Bupyeong-gu, Incheon 403-711, Republic of Korea

ARTICLE INFO

Article history:

Received 17 February 2012
Received in revised form 7 September 2012
Accepted 1 October 2012
Available online 1 December 2012

Keywords:

Safety climate
Manufacturing industry
SEM
Safety knowledge
Safety motivation

ABSTRACT

In Korea, the safety climate of working environments is a crucial aspect of the issue of establishing an industrial accident-prevention policy. However, there have been insufficient studies on safety climate in South Korean working environments. The purpose of this study is to examine the safety climate factors that influence a safe working environment using a South Korean sample. A total of 500 surveys targeting manufacturing industry employees were conducted, and 131 valid samples were used for evaluation. Safety knowledge, safety compliance, safety motivation, and safe working environment were established as the main factors affecting safety climate awareness, and structural equation modeling was performed to confirm significant relationships. Out of eight hypotheses, three were rejected, and safety knowledge and safety motivation were shown to have no statistically significant effect on the safeness of the work environment. This result reflects the limitations of South Korea's government-led Occupational Safety and Health training and promotion programs and of systematic knowledge transfer and the encouragement of participation.

© 2012 Elsevier Ltd. All rights reserved.

1. Introduction

Korea's manufacturing sectors, which include computers, semi-conductors, automobiles, and shipbuilding, play a key role in the national economy. However, manufacturing workers are still subject to various illnesses and injuries at work. Indeed, in the second quarter of 2011, manufacturing accounted for around 35.3% (15,680 workers) of the total number of occupational injuries and illnesses requiring more-than-four-day-long sick leaves in Korea. Workers in the manufacturing industry are subject to significant pressure stemming from the burden to improve productivity and product quality. This pressure often leads to unsafe practices. Indeed, many workers in this sector have been found to frequently ignore safety rules and regulations, not only in Korea but the world over (Wright, 1986). For example, they may not bother to identify or resolve risk factors before beginning work. Carrying too much equipment can also be a risk factor. These and other risky behaviors often result in workplace accidents. Against this background, the Korean government and the corporate sector are currently making their utmost efforts to reduce accidents at work and improve productivity by devising various safety-related policies,

building safety regulations, and operating safety education programs for workers. Related agencies, for their part, have also been enhancing monitoring and supervision of workplaces and running diverse programs and projects to raise safety awareness. However, the most important task that needs to be completed in order to prevent accidents is to conduct field research on workplaces so that its findings can be reflected in future safety policies.

Unfortunately, although manufacturing accounts for the lion's share of workplace accidents and injuries, research on “safety climate” such as that described above has been inadequate. Previous studies both in Korea and abroad have identified the main factors contributing to safety climate and the relations between safety climate and safe work behavior (or lack of accidents). However, these studies have not identified the fundamental causal relationships among the factors. In addition, most existent studies have failed to look at how worker motivation and knowledge affect safeness of work environment. In this context, the present research, which targets manufacturing workers, explores the impact of various safety performance factors (safety knowledge, safety motivation, safety compliance, and safety participation) that have been referred to in previous research by Griffin and Neal (2000) on safeness of work environment. Taking their work one step further, the present research has determined the relationship between safety performance factors and the “safeness” of a work environment, a construction that measures how safe workers think their worksite is with the aim of coming up with fundamental measures to reduce and prevent accidents.

^{*} Corresponding author. Tel.: +82 10 3444 8806; fax: +82 32 518 0861.

E-mail addresses: ohjunkwon@naver.com (O.-J. Kwon), passmgk@gmail.com (Y.-S. Kim).

¹ Tel.: +82 10 8796 8868; fax: +82 32 518 0861.

A research model showing the themes of the empirical analysis is presented in Fig. 1. The variables have been set based on previous studies. The model has been designed to determine the four factors contributing to safety climate, their relations, and their meaningful impacts on safeness of work environment as felt by workers.

As seen in the research model, several assumptions have been made on the basis of the analysis of the impact of safety knowledge and safety motivation on safety compliance and safety participation. Safety compliance and safety participation have also been analyzed in terms of their impacts on safeness of work environment. The assumptions have been developed based on the findings of related studies (Griffin and Neal, 2000; Vinodkumar and Bhasi, 2009) with the aim of understanding the impact that safety knowledge and safety motivation have via their influence on safety compliance and safety participation, if any.

The hypotheses are:

- H1 Safety knowledge has a positive effect on safety compliance.
- H2 Safety knowledge has a positive effect on safeness of work environment.
- H3 Safety knowledge has a positive effect on safety participation.
- H4 Safety motivation has a positive effect on safety compliance.
- H5 Safety motivation has a positive effect on safeness of work environment.
- H6 Safety motivation has a positive effect on safety participation.
- H7 Safety compliance has a positive effect on safeness of work environment.
- H8 Safety participation has a positive effect on safeness of work environment.

2. Background and related research

Safety climate is defined here as “employees’ perceptions pertaining to safety policies, procedures, and practices” (following Zohar, 1980). Policies and procedures are the guidelines established to ensure safe behavior, and practices are the process of the implementation of the policies and procedures as well as employees’ perceptions of the relative importance of safe conduct at work (Zohar and Luria, 2005). A positive safety climate is an important part of a safe work environment (Kath et al., 2010). In short, safety climate is a theoretical term focusing more on the perception of behaviors than on the behaviors themselves (Vinodkumar and Bhasi, 2009). To date, a number of works on safety climate, including some on changing worker behavior, have been produced. Some

researchers have conducted empirical analyses to develop and present reliable and justifiable tools to measure safety climate with the aim of determining the factors contributing to it (Mearns et al., 1998; Guldenmund, 2000; Idris et al., 2012). Based on studies looking at measurement tools (Zohar, 1980; Lin et al., 2008; Martínez-Córcoles et al., 2011), we can see that various studies on the impact on safety behaviors (Griffin and Neal, 2000; Brown and Holmes, 1986; Eid et al., 2012) and their relationship with accidents and diseases (Zohar, 2000; Zohar, 2002; Gillen et al., 2002) have been conducted. In recent years, much attention has been given to research verifying factors of safety climate in specific sectors and teasing out demographic differences among workers (Vinodkumar and Bhasi, 2009). Research on the relations between safety education and safety climate has been also attracting significant interest. Some of the more prominent studies are introduced below (Gykye and Salminen, 2009).

Zohar (1980) invented a measurement method composed of 40 questions to assess safety climate and presented eight factors affecting it. This research confirmed that management attitudes and safe production procedures play important roles. When workers considered their safety climate stable, the efficiency of safety education programs was higher and the accident rate dropped. This pioneer study has been referred to in other research on safety climate and related assessment tools (Zohar, 1980).

Brown and Holmes (1986) applied the Zohar model to American manufacturing workers, finding that safety behaviors were particularly affected by three of the factors identified by Zohar: (1) worker recognition of management attitudes toward safety, (2) the impact of safety on promotion, and (3) worker perception of danger at work.

Zohar (2000) investigated 53 groups of workers in the manufacturing sector to determine the relationship between each group’s safety climate and microaccidents. As part of this project, Zohar developed a 10-question measurement method that evaluated safety behaviors on the part of management (such as the practice of complimenting employees for compliance with safety rules) as well as employees’ expectations toward management, for instance, that management will resolve complaints about its inadequate focus on minor safety issues. This study showed that workers within these groups had similar safety perceptions—within-group homogeneity—while each group showed differences: between-group variance. It was also found that the better the safety climate in a group, the lower the rate of microaccidents (Zohar, 2000).

Griffin and Neal (2000) examined the impact of safety climate on safety performance. There had previously been a shortage of research on the relationship between safety behaviors and safety climate. Their research can be differentiated from previous work in

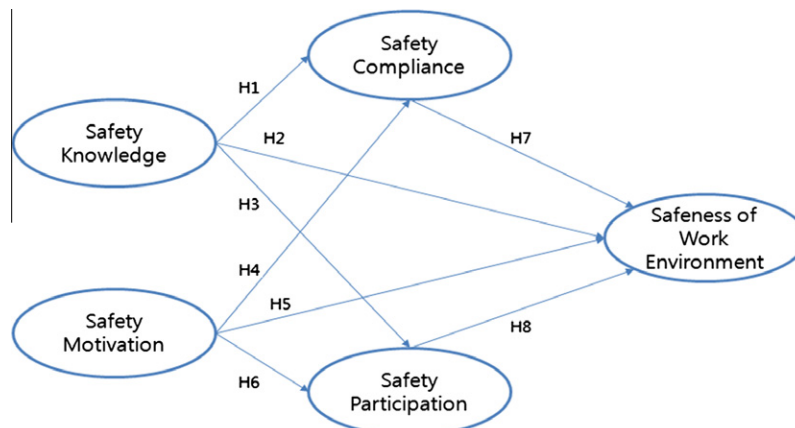


Fig. 1. Research model.

Download English Version:

<https://daneshyari.com/en/article/6976514>

Download Persian Version:

<https://daneshyari.com/article/6976514>

[Daneshyari.com](https://daneshyari.com)